

## **Two New Records of Marine Hydromedusae (Cnidaria: Hydrozoa) in Korea**

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### **ABSTRACT**

Some hydromedusae were collected from Shihwaho (Kyonggi-do), Korea Strait and Yeosu, Korea during years 2000-2002. They were identified into *Sarsia tubulosa* (M. Sars, 1835) of the order Anthomedusae, and *Liriope tetraphylla* (Chamisso and Eysenhardt, 1821) of the order Trachymedusae respectively. They are new to the Korean fauna. The order Trachymedusae is first recorded in Korea. The long tube-like manubrium and four marginal tentacles are characteristics of *S. tubulosa*. In *L. tetraphylla*, the four triangle-shaped gonads and their positions upon half of surface of subumbrella, the seven blind centripetal canals in a quadrant and the long fat manubrium are its distinct characteristics. Resulting from this work, the Korean hydromedusae identified so far consist of 13 species of 11 families in five orders.

Key words: Taxonomy, marine hydromedusa, Anthomedusae, Trachymedusae, Korea

### **INTRODUCTION**

The hydromedusae are a stage of the life cycle in hydroids, and alternate with polyp hydroids, reproduce sexually in common except for some species, and contribute to species dispersal,

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however there is no polyp stage in the order Trachymedusae, which has only medusa stage in its life cycle (Ruppert and Barnes, 1994).

The taxonomic studies of Korean marine hydromedusae were done by Park (1996, 1999, 2001, 2002) and Lee and Park (2001). Resulting from these previous works, 10 species of 10 families in four orders, Anthomedusae (4 species), Leptomedusae (4 species), Limnomedusae (1 species) and Siphonophora (1 species) were known so far.

Some hydromedusae were collected from Shiwhaho (Kyonggi-do), Korea Strait and Yeosu, Korea with a net and hands during years 2000-2002. The specimens were preserved in 5% formalin after narcotization with menthol powder for identification. They were identified into *Sarsia tubulosa* (M. Sars, 1835) of the order Anthomedusae, and *Liriope tetraphylla* (Chamisso and Eysenhardt, 1821) of the order Trachymedusae respectively, which are new to the Korean fauna. The order Trachymedusae is first recorded in Korea. The redescrptions and figures of them are given.

## SYSTEMATIC ACCOUNTS

Phylum Cnidaria 자포동물문

Class Hydrozoa 히드라충강

Order Anthomedusae 꽃해파리목

Family Corynidae 곤봉히드라과

### ***Sarsia tubulosa* (M. Sars, 1835) 관사르스해파리 (신칭) (Fig. 1A-E)**

*Oceania tubulosa* M. Sars, 1835, p. 25, pl. v, fig. 11a, b.

*Sarsia tubulosa*: Russel, 1953, p. 55, pl. 1, fig. 2; pl. II, fig. 6, text-figs. 21, 22A, B, 23A; Mayer, 1910, p. 52; Kramp, 1926, p. 8, pl. 1, figs. 5-7, textfigs. 6-16, chart. II; 1968, p. 6, fig. 2; Petersen, 1990, p. 213, fig. 45A-D; Browne, 1903, p. 9; Uchida, 1940, p. 282, fig. 2;

**Material examined.** Shiwhaho (Kyonggi-do), 3 May 2002 (J. H. Park).

**Description.** Umbrella higher than wide, bell-shaped, about 8 mm high and 6 mm wide. Apical knob usually present and mesoglea somewhat thick. Stomach very extensible, long tubular with short manubrium and mouth in terminal, usually extended far beyond umbrella margin, much longer than bell high. 4 radial canals arising from proximal of stomach and entering marginal tentacular bulbs. An interradial furrow running down at center of each interradius on exumbrella. Marginal tentacles filiform, 4 in number, with more or less large bulbs placed on nearer exumbrella, expanded as like thread in live. One ocellus on each tentacular bulb. Gonad developed on surface of stomach. Transparent milky white except for stomach, marginal tentacles and manubrium which showed orange or brown colour in live.

**Remarks.** The long slender tube-like stomach is the characteristic of *S. tubulosa*. The colour of this species is variable. According to Kramp (1926) there are three colour varieties: blue (stomach and marginal tentacles pure sky blue), brown (stomach and marginal tentacles bulbs brown, yellowish brown or green) and scarlet (apical knob and marginal tentacle bulbs brilliant scarlet). But our specimens showed brown and light orange colours in stomach, manubrium and marginal tentacles.

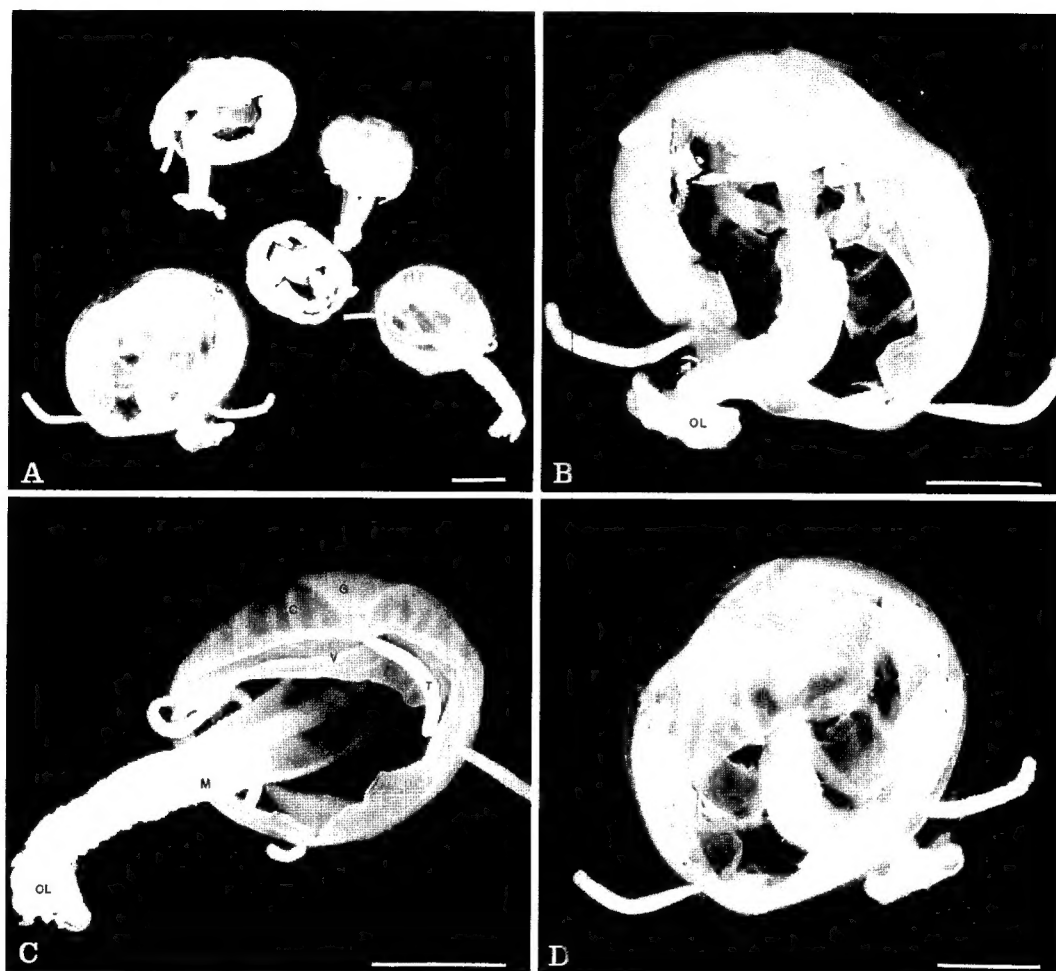


**Fig. 1.** *Sarsia tubulosa*. A, medusae; B, C, enlarged medusae (G: gonad developed on surface of stomach); D, bell margin (T: tentacle, TB: Tentacular bulb, V: velum); E, enlarged apical portion (P: apical projection, R: radial canal). Scale bars = 2 mm (D, E), 5 mm (A-C)

**Distribution.** Norway, Spitzbergen, all coasts of British Isles, English Channel, North Sea, Baltic, Danish waters, Murman coast, White Sea, Iceland, Greenland, Black Sea, American coasts of North Atlantic as far south as Newport, Pacific coasts of America from San Francisco to Puget Sound, Japan.

Order Trachymedusae 경해파리목

Family Geryoniidae 종이우산해파리과 (신칭)



**Fig. 2.** *Liriope tetraphylla*. A, medusae; B, oral view (OL: fleated oral lobe); C, lateral view (C: cetripetal canal, G: gonad, M: manubrium, OL: fleated oral lobe, T: marginal tentacle, V: velum); D, aboral view. Scale bars = 5 mm (A-D).

***Liriope tetraphylla* (Chamisso and Eysenhardt, 1821) 네잎백합해파리 (신칭) (Fig. 2A-D)**

*Geryonia tetraphylla* Chamisso and Eysenhardt, 1821, p. 357, pl. 27, fig. 2.

*Liriope rosacea*: Agassiz, 1862, p. 365; Maas, 1905, p. 62; Mayer, 1910, p. 417, pl. 52, fig. 1.

*Liriope tetraphylla*: Uchida, 1947, p. 314; Maas, 1905, p. 61; Kramp, 1968, p. 122, fig. 333; Mayer, 1910, p. 418, pl. 53, fig. 4, 273, 273a.

*Liriope compacta* Maas, 1905, p. 62, figs. 55-59; Mayer, 1910, p. 417, fig. 271.

*Liriope crucifera*: Maas, 1905, p. 62.

**Material examined.** Korea Strait (129° 8'E in longitude and 35° 4'N in latitude), Dec. 2000, (B. C. Oh); Yosu, 25 May 2002 (S. H. Ko).

**Description.** Bell almost hemispherical, relatively small 1 cm × 0.9 cm–1.8 cm × 1.0 cm (wide ×

high) in specimens from Yosu, Korea, with thick mesogleal jelly. Manubrium long, about twice as long as bell, extended far beyond bell margin, at its base around half as wide as bell, tapering toward distal portion, with 4 pleated oral lips. Some specimens with a small projection in center of their 4 oral lips. Four radial canals broad, each connected with a marginal ring canal. Velum well developed, hang down from bell margin. Gonads developed upon half of surface of subumbrella, associated with radial canals, wide triangle-shaped, its a angular point not touched with marginal ring canal, 4 in number and their upper sides meet as ring-like. Marginal tentacle short and club-shaped in contraction, 4 in number in common. Bell margin divided into 4 quadrants by marginal tentacles. Blind centripetal canal arising from ring canal, 7 in each quadrant, most not reached to upper side of gonad.

**Remarks.** *Liriope tetraphylla* is well known species of the genus *Liriope*. Though *L. tetraphylla* has four marginal tentacles in common, some our specimens have five or six ones. Maas(1905) noted that the shape of gonad, the length of manubrium and the number of centripetal canals of this species are so variable with growth that it is difficult to discriminate between *L. rosacea*, *L. crucifera* and *L. compacta* (Table 1). I also think they should be treated as synonyms. For the characters as like the color, the size and the number of tentacles are also changed by food supply, they are not valuable taxonomic characters.

**Table 1.** Characters comparison of synonyms with *L. tetraphylla* by Maas(1905)

Character	Specific name		
	<i>tetraphylla</i>	<i>rosacea</i> = <i>crucifera</i>	<i>compact</i>
Shape of gonad	long oval-shaped	triangle-shaped	feather or diamond-shaped
N. of centripetal in a quadrant	1-3	3	5-7

**Distribution.** Widely distributed in warm oceans: Japan (Iwayama Bay), Sulu Sea, China Sea, Malay Archipelago, Tortugas (Florida), Atlantic and Mediterranean, Pacific and Indian Oceans.

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## 요 약

경기도 시화호와 여수 및 대한해협에서 채집된 히드라해파리류는 관사르스해파리 (*Sarsia tubulosa*)와 네잎백합해파리 (*Liriope tetraphylla*)로 각각 동정되었다. 이들은 한국 미기록종으로 판명되어 재기재하여 보고한다. 관사르스해파리는 긴 관모양의 구멍과 4개의 촉수를 가진다. 경해파리목 (Trachymedusae)에 속하는 네잎백합해파리는 내산의 중앙 표면에 위치한 삼각형의 생식선과 우산의 4분원 (quadrant)에 7개의 구심맹관 (blind centripetal canals)을 가지며 길고 굵은 구멍과 구멍 끝에 4개의 주름진 구역을 가진다. 본 연구의 결과 지금까지 밝혀진 한국 해산 히드라해파리류는 5목 11과 12종이 된다.